

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. *(Currently amended)* A method for abatement of insoluble volatile organic compounds (VOC) in an exhaust gas stream originating from a reactor, the method comprising:

inputting a spray of liquid water droplets or water film;

partially oxidizing insoluble organic compounds contained within the exhaust gas stream by passing an exhaust gas stream through pulsed corona discharges in the presence of the spray of liquid water droplets or water film to form one or more partial oxidation products that are soluble in the water spray droplets or film thereby creating an effluent water stream and an effluent gas stream, wherein

said pulsed corona discharges are pulsed at a rate in the range of from 0.01 to 2 kHz; and

an electrical energy expenditure of not more than 50 eV per molecule of VOC is utilized;

and

controlling the rate of flow of the water droplets or the water film so that the ratio of the flow of spray of liquid water droplets or water film to the exhaust gas flow is from about 0.2 to about 2 milliliters/minute at one standard liter per minute of exhaust gas flow;

thereby removing the insoluble volatile organic compounds from the exhaust gas stream.
2. *(Previously presented)* The method according to claim 1 wherein said exhaust gas stream is passed through said pulsed corona discharges in the presence of a spray of water droplets.
3. *(Currently amended)* The method according to claim 1 wherein said pulsed corona discharges are pulsed at a rate in the range of from about 0.1 to about 1 kHz.
4. *(Currently amended)* The method according to claim 1 wherein said exhaust gas stream contains in the range of from about 60 to about 6000 ppm VOC.

5. (Original) The method according to claim 1 wherein said exhaust gas stream is that produced from a process selected from the group consisting of papermaking, metal cleaning or plating, paint manufacturing, plastics manufacture, petroleum refining and dye-making.

6. (*Canceled*)

7. (*Currently amended*) The method according to claim [[6]] 17 wherein said method is carried out at an exhaust stream temperature in the range of from about 40°C (103°F) to about 65°C (150°F).

8. (*Currently amended*) The method according to claim [[6]] 17 wherein said exhaust stream contains in the range of from about 200 300 ppm to about 4200 4140 ppm VOC.

9. (*Currently amended*) The method according to claim [[6]] 17 wherein said exhaust stream is produced from a papermaking process.

10-11. (*Canceled*)

12. (Cancelled)

13. (*Currently amended*) The method according to claim [[10]] 18 wherein said papermaking process is brownstock ~~or oriented strandboard~~ production.

14. (*Currently amended*) The method according to claim [[10]] 18 including the further step of admixing the effluent water stream containing oxidized VOC with another waste water stream.

15. (*Currently amended*) The method according to claim [[10]] 18 wherein the water of said water spray is provided from waste water of said papermaking process.

16. (*New*) The method according to claim 1 wherein said exhaust gas stream contains insoluble VOC in the range up to about 200 ppm.

17. (*New*) The method of claim 1 wherein the exhaust gas stream is produced from a papermaking, metal cleaning or plating, paint manufacturing, plastics manufacture, petroleum refining, cooking or dye-making process and contains containing in the range of from 60 to 6000 ppm VOC.

18. (*New*) The method of claim 16 wherein the exhaust gas stream originates from a reactor the method comprising passing an exhaust gas stream produced from a papermaking process that contains in the range of from 300 ppm to about 4140 ppm VOC.